

NPDES Permit No. IL0077658
Notice No. 6968c

Public Notice Beginning Date: **February 5, 2015**

Public Notice Ending Date: **March 9, 2015**

National Pollutant Discharge Elimination System (NPDES)
Permit Program

Draft Modified NPDES Permit to Discharge into Waters of the State

Public Notice/Fact Sheet Issued By:

Illinois Environmental Protection Agency
Bureau of Water, Division of Water Pollution Control
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
217/782-0610

Name and Address of Discharger:

Knight Hawk Coal, L.L.C.
500 Cutler-Trico Road
Percy, IL 62272

Name and Address of Facility:

Knight Hawk Coal, L.L.C.
Prairie Eagle Mine
1 ½ miles northwest of Cutler, Illinois
(Perry County)

The Illinois Environmental Protection Agency (IEPA) has made a tentative determination to issue an NPDES permit to discharge into waters of the state and has prepared a draft permit and associated fact sheet for the above named discharger. The Public Notice period will begin and end on the dates indicated in the heading of this Public Notice/Fact Sheet. Comments will be accepted until the Public Notice period ending date indicated above, unless a request for an extension of the original comment period is granted by the Agency. Interested persons are invited to submit written comments on the draft permit to the IEPA at the above address. Commentors shall provide his or her name and address and the nature of the issues proposed to be raised and the evidence proposed to be presented with regards to those issues. Commentors may include a request for public hearing. The NPDES permit and notice number(s) must appear on each comment page.

The application, engineer's review notes, Public Notice/Fact Sheet, draft permit, comments received, and other documents are available for inspection and may be copied at the IEPA between 9:30 a.m. and 3:30 p.m. Monday through Friday when scheduled by the interested person.

As provided in Section 309.115(a) of the Act, any person may submit a request for a public hearing and if such written comments or requests indicate a significant degree of public interest in the draft permit, the permitting authority may, at its discretion, hold a public hearing. The Agency shall issue public notice of such hearing no less than thirty (30) days prior to the date of such hearing in the manner described by Sections 309.109 through 309.112 of the Act for public notice. The Agency's responses to written and/or oral comments will be provided in the Responsiveness Summary provided when the final permit is issued.

The applicant operates an existing surface (SIC 1221) and underground mine (SIC 1222). Mine operations result in the discharge of alkaline mine drainage.

Public comments are invited on the following proposed modifications incorporated into this Permit renewal:

An additional 2.5 acres to construct a new Sedimentation Pond and Outfall 007.

An additional 3.7 acres for a water line to transport make-up water.

Five (5) additional groundwater monitoring Wells MW-14, MW-15, MW-16, MW-17 and MW-18.

Plugging of groundwater Monitoring Well, UG-MW-01.

This facility has five (5) existing discharges which are located in Perry County, Illinois. The following information identifies the discharge points, receiving streams, and stream classifications:

| <u>Outfall</u> | <u>Receiving Stream</u> | <u>Latitude (North)</u> | <u>Longitude (West)</u> |
|----------------|---|-------------------------|-------------------------|
| 001 | Unnamed tributary to Rock Fork | 38°04'17.3" | 89°33'27.7" |
| 002 | Unnamed tributary to North Fork Cox Creek | 38°02'46.8" | 89°35'31.1" |
| 003 | Unnamed tributary to North Fork Cox Creek | 38°02'07.0" | 89°35'36.0" |
| 004 | Unnamed tributary to North Fork Cox Creek | 38°02'02.0" | 89°35'36.0" |
| 005 | Unnamed tributary to Rock Fork | 38°04'02.8" | 89°33'30.7" |

The stream segment NCDD of Rock Fork receiving the flow from the unnamed tributary into which Outfalls 001 and 005 discharge is not on the 2014 303(d) list of impaired waters.

The stream segment IIHA of North Fork Cox Creek receiving the flow from the unnamed tributary into which Outfalls 002, 003 and 004 discharges is on the 2014 303(d) list of impaired waters. The following parameters have been identified as the pollutants causing impairment:

| <u>Outfall</u> | <u>Potential Causes</u> |
|----------------|--|
| 002, 003, 004 | Sulfates Sedimentation/Siltation Total Dissolved Solids (TDS) Alteration in stream-side or Littoral vegetative cover, Endrin |

Application is made for one (1) new discharge which is located in Perry County, Illinois. The following information identifies the discharge points, receiving streams and stream classifications:

| <u>Outfall</u> | <u>Receiving Stream</u> | <u>Latitude (North)</u> | <u>Longitude (West)</u> |
|----------------|----------------------------------|-------------------------|-------------------------|
| 007 | Unnamed tributary to Galum Creek | 38° 05' 05.78" | 89° 33' 18.29" |

The stream segment NCD-05 of Galum Creek receiving the flow from the unnamed tributary into which Outfall 007 discharges is on the 2014 303(d) list of impaired waters. The following parameters have been identified as the pollutants causing impairment:

| <u>Outfall</u> | <u>Potential Causes</u> |
|----------------|-------------------------|
| 007 | Cause Unknown |

The alkaline mine discharge from this facility shall be monitored and limited at all times as follows:

Outfall: 001

| Discharge Condition | Parameters | | | | | | | | | | | | |
|---------------------|-----------------------------------|---------------|-----------------------------|---------------|---------------|-------------------------|--------------------|-----------------|-------------------|--------------|--------------|-----------------------|------------------------------|
| | Total Suspended Solids (3) (mg/l) | | Iron (total) (3) (4) (mg/l) | | pH (3) (S.U.) | Alkalinity/ Acidity (3) | Sulfate (1) (mg/l) | Chloride (mg/l) | Mn (total) (mg/l) | Hardness (5) | Mercury | Flow (MGD) | Settleable Solids (2) (ml/l) |
| | 30 day average | daily maximum | 30 day average | daily maximum | | | | | | | | | |
| I | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1850 | 500 | 1.0 | Monitor only | Monitor only | Measure When Sampling | - |
| II | - | - | - | - | 6.0-9.0 | - | 1850 | 500 | - | Monitor only | - | Measure When Sampling | 0.5 |
| III | - | - | - | - | 6.0-9.0 | - | 1850 | 500 | - | Monitor only | - | Measure When Sampling | - |
| IV | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1850 | 500 | 1.0 | Monitor only | Monitor only | Measure When Sampling | - |

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24 hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.
- (1) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
- (2) Settleable solids are monitored only as a result of a discharge due to precipitation events which exceed a predetermined 24-hour duration or snowmelt total. Settleable solids effluent limitations for alkaline mine discharges are contained in 35 Ill. Adm. Code 406.110.
- (3) Effluent standards for mine discharges are contained in 35 Ill. Adm. Code 406.106.
- (4) Discharges from Outfall 001, being approved after July 27, 1987, are subject to a 30-day average effluent limitation for Iron of 3.0 mg/l. Daily maximum effluent concentrations are calculated as twice the 30-day average.
- (5) Hardness monitoring is required to determine the appropriateness of the sulfate permit limit.

The alkaline mine discharge from this facility shall be monitored and limited at all times as follows:

Outfall: 002, 005

| Discharge Condition | Parameters | | | | | | | | | | | | |
|---------------------|-----------------------------------|---------------|-----------------------------|---------------|---------------|-------------------------|--------------------|-----------------|-------------------|--------------|--------------|-----------------------|------------------------------|
| | Total Suspended Solids (3) (mg/l) | | Iron (total) (3) (4) (mg/l) | | pH (3) (S.U.) | Alkalinity/ Acidity (3) | Sulfate (1) (mg/l) | Chloride (mg/l) | Mn (total) (mg/l) | Hardness (5) | Mercury | Flow (MGD) | Settleable Solids (2) (ml/l) |
| | 30 day average | daily maximum | 30 day average | daily maximum | | | | | | | | | |
| I | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1700 | 500 | 1.0 | Monitor only | Monitor only | Measure When Sampling | - |
| II | - | - | - | - | 6.0-9.0 | - | 1700 | 500 | - | Monitor only | - | Measure When Sampling | 0.5 |
| III | - | - | - | - | 6.0-9.0 | - | 1700 | 500 | - | Monitor only | - | Measure When Sampling | - |
| IV | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1700 | 500 | 1.0 | Monitor only | Monitor only | Measure When Sampling | - |

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24 hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.
- (1) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
- (2) Settleable solids are monitored only as a result of a discharge due to precipitation events which exceed a predetermined 24-hour duration or snowmelt total. Settleable solids effluent limitations for alkaline mine discharges are contained in 35 Ill. Adm. Code 406.110.
- (3) Effluent standards for mine discharges are contained in 35 Ill. Adm. Code 406.106.
- (4) Discharges from Outfall 002 and 005, being approved after July 27, 1987, are subject to a 30-day average effluent limitation for Iron of 3.0 mg/l. Daily maximum effluent concentrations are calculated as twice the 30-day average.
- (5) Hardness monitoring is required to determine the appropriateness of the sulfate permit limit.

The alkaline mine discharge from this facility shall be monitored and limited at all times as follows:

Outfall: 003

| Discharge Condition | Parameters | | | | | | | | | | |
|---------------------|-----------------------------------|---------------|------------------------------|---------------|---------------|-------------------------|--------------------|-----------------|--------------|-----------------------|------------------------------|
| | Total Suspended Solids (3) (mg/l) | | Iron (total) (3), (4) (mg/l) | | pH (3) (S.U.) | Alkalinity/ Acidity (3) | Sulfate (1) (mg/l) | Chloride (mg/l) | Hardness (5) | Flow (MGD) | Settleable Solids (2) (ml/l) |
| | 30 day average | daily maximum | 30 day Average | daily maximum | | | | | | | |
| I | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1500 | 500 | Monitor only | Measure When Sampling | - |
| II | - | - | - | - | 6.0-9.0 | - | 1500 | 500 | Monitor only | Measure When Sampling | 0.5 |
| III | - | - | - | - | 6.0-9.0 | - | 1500 | 500 | Monitor only | Measure When Sampling | - |
| IV | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1500 | 500 | Monitor only | Measure When Sampling | - |

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24 hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.
- (1) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
- (2) Settleable solids are monitored only as a result of a discharge due to precipitation events which exceed a predetermined 24-hour duration or snowmelt total. Settleable solids effluent limitations for alkaline mine discharges are contained in 35 Ill. Adm. Code 406.110.
- (3) Effluent standards for mine discharges are contained in 35 Ill. Adm. Code 406.106.
- (4) Discharges from Outfall 003, being approved after July 27, 1987, are subject to a 30-day average effluent limitation for Iron of 3.0 mg/l. Daily maximum effluent concentrations are calculated as twice the 30-day average.
- (5) Hardness monitoring is required to determine the appropriateness of the sulfate permit limit.

The alkaline mine discharge from this facility shall be monitored and limited at all times as follows:

Outfall: 004

| Discharge Condition | Parameters | | | | | | | | | | |
|---------------------|-----------------------------------|---------------|------------------------------|---------------|---------------|-------------------------|--------------------|-----------------|--------------|-----------------------|------------------------------|
| | Total Suspended Solids (3) (mg/l) | | Iron (total) (3), (4) (mg/l) | | pH (3) (S.U.) | Alkalinity/ Acidity (3) | Sulfate (1) (mg/l) | Chloride (mg/l) | Hardness (5) | Flow (MGD) | Settleable Solids (2) (ml/l) |
| | 30 day average | daily maximum | 30 day average | daily maximum | | | | | | | |
| I | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1000 | 500 | Monitor only | Measure When Sampling | - |
| II | - | - | - | - | 6.0-9.0 | - | 1000 | 500 | Monitor only | Measure When Sampling | 0.5 |
| III | - | - | - | - | 6.0-9.0 | - | 1000 | 500 | Monitor only | Measure When Sampling | - |
| IV | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1000 | 500 | Monitor only | Measure When Sampling | - |

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24 hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

- (1) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
- (2) Settleable solids are monitored only as a result of a discharge due to precipitation events which exceed a predetermined 24-hour duration or snowmelt total. Settleable solids effluent limitations for alkaline mine discharges are contained in 35 Ill. Adm. Code 406.110.
- (3) Effluent standards for mine discharges are contained in 35 Ill. Adm. Code 406.106.
- (4) Discharges from Outfall 004, being approved after July 27, 1987, are subject to a 30-day average effluent limitation for Iron of 3.0 mg/l. Daily maximum effluent concentrations are calculated as twice the 30-day average.
- (5) Hardness monitoring is required to determine the appropriateness of the sulfate permit limit.

The alkaline mine discharge from this facility shall be monitored and limited at all times as follows:

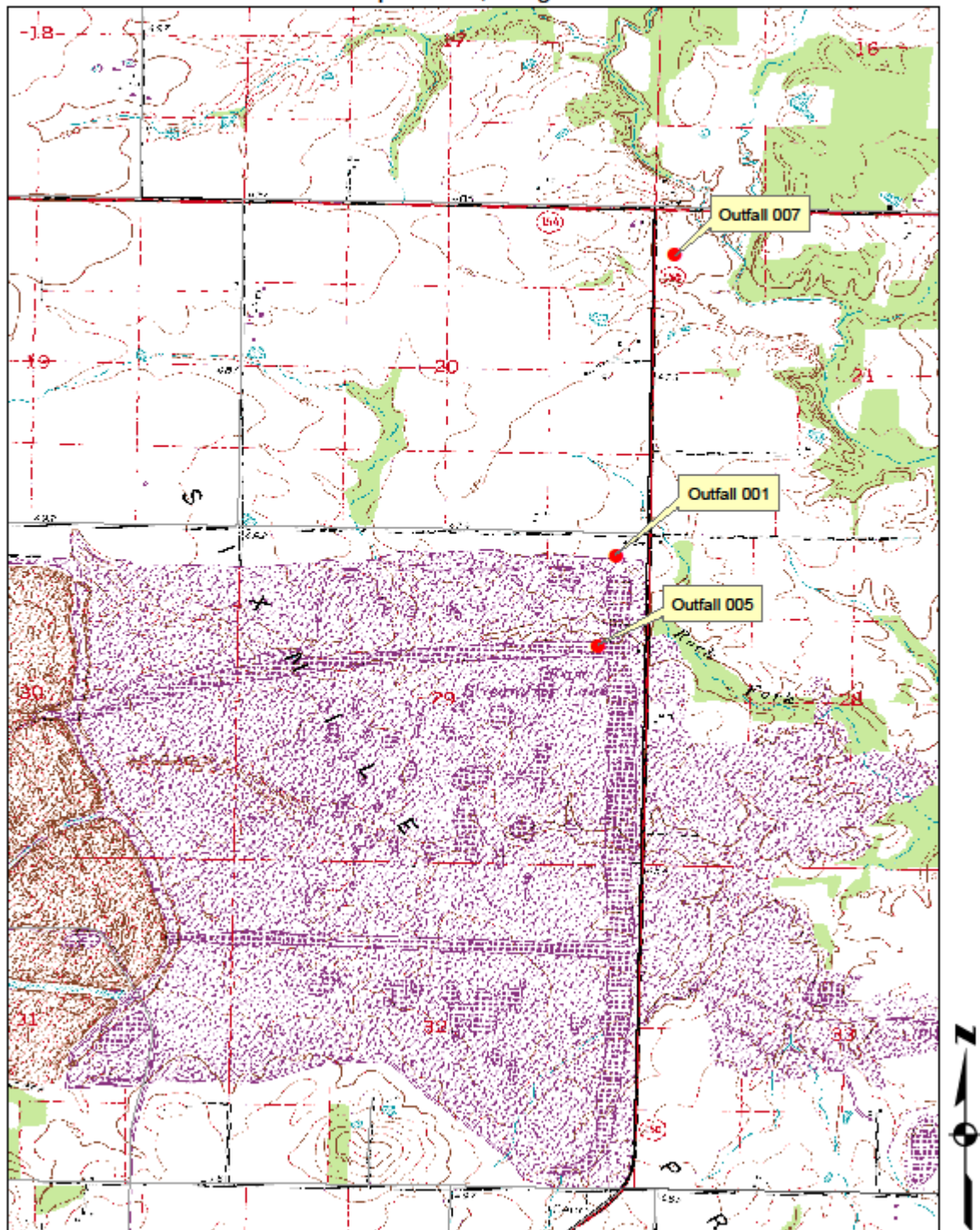
Outfall: 007

| Discharge Condition | Parameters | | | | | | | | | | | | |
|---------------------|-----------------------------------|---------------|-----------------------------|---------------|---------------|-------------------------|--------------------|-----------------|-------------------|---------------|--------------|-----------------------|------------------------------|
| | Total Suspended Solids (3) (mg/l) | | Iron (total) (3) (4) (mg/l) | | pH (3) (S.U.) | Alkalinity/ Acidity (3) | Sulfate (1) (mg/l) | Chloride (mg/l) | Mn (total) (mg/l) | | Hardness (5) | Flow (MGD) | Settleable Solids (2) (ml/l) |
| | 30 day average | daily maximum | 30 day average | daily maximum | | | | | 30 day average | daily maximum | | | |
| I | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1850 | 500 | 2.0 | 4.0 | Monitor only | Measure When Sampling | - |
| II | - | - | - | - | 6.0-9.0 | - | 1850 | 500 | - | - | Monitor only | Measure When Sampling | 0.5 |
| III | - | - | - | - | 6.0-9.0 | - | 1850 | 500 | - | - | Monitor only | Measure When Sampling | - |
| IV | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1850 | 500 | 2.0 | 4.0 | Monitor only | Measure When Sampling | - |

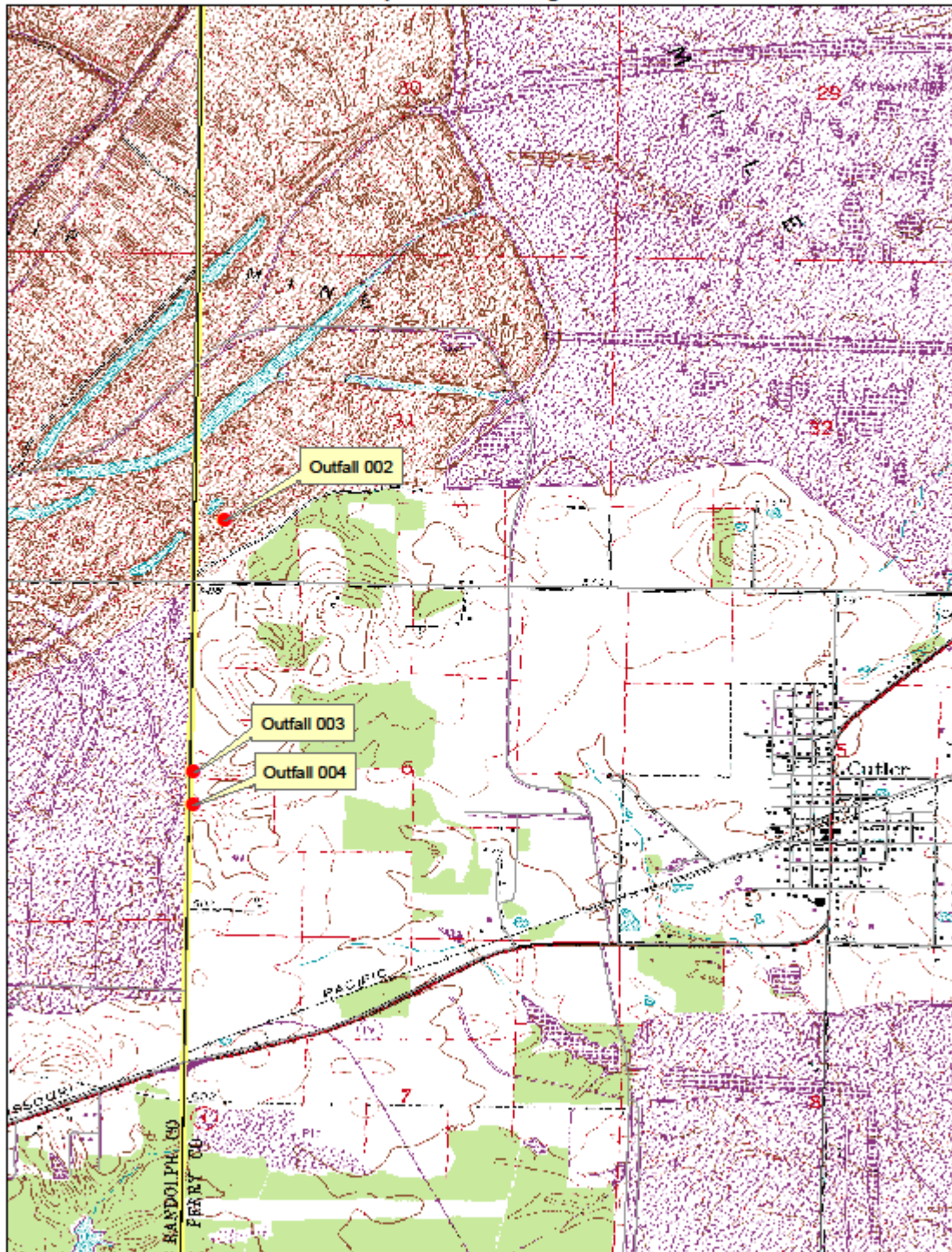
- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24 hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.
- (1) Sulfate water quality standards and effluent limitations determined in accordance with 35 Ill. Adm. Code 302.208(h).
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- (3) Effluent standards for mine discharges are contained in 35 Ill. Adm. Code 406.106.
- (4) Discharges from Outfall 007, being approved after July 27, 1987, are subject to a 30-day average effluent limitation for Iron of 3.0 mg/l. Daily maximum effluent concentrations are calculated as twice the 30-day average.
- (5) Hardness monitoring is required to determine the appropriateness of the sulfate permit limit.

To assist you in identifying the location of the discharges, please refer to the attached map. The permit area for this facility is located in Sections 5, 6 and 7, Township 6 South, Range 4 West and Sections 21, 29, 30, 31 and 32, Township 5 South, Range 4 West, 3rd P.M., all located in Perry County, Illinois.

Knight Hawk Coal, L.L.C. - Prairie Eagle Mine
Prairie Eagle Mine
Perry County
Township 5 South, Range 4 West



Knight Hawk Coal, L.L.C. - Prairie Eagle Mine
Prairie Eagle Mine
Perry County
Township 6 South, Range 4 West



**Antidegradation Assessment
Knight Hawk Coal, LLC – Prairie Eagle Mine
NPDES Permit No. IL0077658
Perry County**

The NPDES permit for the subject facility is being modified to include a 2.5 acre Incidental Boundary Revision (IBR) and a new sedimentation basin (Pond 007) and outfall (Outfall 007). A borehole would be installed in the currently approved permit area in order to bring water from the nearby underground mine and pump it to Pond 007. Currently, underground water from this area is pumped approximately 3 miles to the mine entry and discharged through Outfall 001. Of the 2.5 acres of IBR area, 1.7 acres would be disturbed and surface water drainage from this area would be sent to Pond 007. Effluent from Outfall 007 would be comprised of the surface water runoff from this area (precipitation driven) and approximately 50,000-75,000 GPD of underground pumpage (groundwater driven). A chemical analysis of underground pumpage from this area was provided in the Applicant's November 25, 2014 document entitled *Assessment of Alternatives for Minimal Environmental Degradation and Economic Benefit Analysis*. A review of this data as well as effluent data from Outfall 001 collected during dry weather discharges (underground pumpage only) confirms that discharges of underground pumpage from this area would attain water quality standards. Discharges from Outfall 007 would be received by an unnamed, manmade ditch constructed by Consolidation Coal Company during their reclamation activities at Burning Star No. 4 mine. The ditch flows approximately 700 feet until being received by a restored portion of Galum Creek. Given that the unnamed ditch is manmade, Galum Creek should be considered the receiving water.

Identification and Characterization of the Affected Water Body.

Galum Creek (Segment NCD-05) is a General Use stream with zero 7Q10 flow. It is listed on the 2014 Illinois Integrated Water Quality Report and Section 303(d) List as impaired for aquatic life use (causes = cause unknown). The stream has not been given an integrity rating or been listed as biologically significant in the 2008 Illinois Department of Natural Resources publication *Integrating Multiple Taxa in a Biological Stream Rating System*. It is not enhanced in regards to the dissolved oxygen water quality standard.

At the request of the Agency, the Applicant contracted Midwest Reclamation Resources to conduct a stream survey to assess the physical, chemical, and biological characteristics of Galum Creek near the proposed discharge location. A full report of the stream survey was provided in the report entitled *Galum Creek Stream Biotic Characterization* which was submitted to the Agency on November 6, 2014. A summary of the stream survey is provided below.

A physical habitat assessment of Galum Creek was conducted using the USEPA Rapid Bio-assessment Protocol (RBP) for wadeable and headwater streams and the Rosgen morphological assessment methodology. The drainage area for the surveyed portion of Galum Creek is 24.9 square miles. Near the proposed discharge location, Galum Creek has an average bankfull width of approximately 22.5 ft and a bankfull mean depth of 1.0 ft. The average entrenchment ratio for the surveyed portion of Galum Creek is 1.24, indicating a moderate level of entrenchment. The average width/depth ratio is 22.5, indicating a shallow-wide stream cross-section. Galum Creek possesses low sinuosity (1.29) and the overall slope of the stream is very flat with a drop of 0.1 feet for every 1,000 feet. The streambed substrate is predominantly sand (90%) with a small amount of clay (10%). The major habitat types within the stream are runs (60%) with the remaining habitats characterized as riffles (20%) and pools (20%). Based on the above information the surveyed stream would primarily be characterized as a "F5" stream type according to Rosgen methodology, although some short segments of the stream may also be described as a "G5" stream type. The RBP habitat assessment produced a total score of score of 90 which indicates Suboptimal habitat quality. Using the Agency's Qualitative Stream Habitat Assessment Procedure, the stream produced a total score of 90 indicating a Poor to Fair habitat quality.

Water quality measurements from Galum Creek were taken on June 18, 2014 to assess temperature, total suspended solids, total dissolved solids, conductivity, dissolved oxygen, pH, hardness, alkalinity, acidity, iron, manganese, chloride, and sulfate. The stream was found to be attaining water quality standards for all of these parameters.

Benthic macroinvertebrates were sampled on June 17, 2014 using the multihabitat technique. A 100-ft section of stream with a wide variety of stream habitats was sampled using a 12" D-net. Stream habitats included vegetated stream banks, unvegetated stream banks, pools, runs, riffles, and various substrate types. The different habitats were sampled proportionally to their relative occurrence. A total of 10 half-meter jabs were conducted and then preliminarily sorted to remove large substrate and detritus. Macroinvertebrates were identified to genus or species and larval chironomids to sub-family. There were a total of 26 taxa collected within the sampled portion of Galum Creek. The macroinvertebrates collected have a wide range of pollution tolerance values with an Index of Biological Integrity of 4.9, placing the stream in a "good" category according to the USEPA RBP. The majority of specimens collected were gatherer/collector feeders (75%). An amphipod (*Hyalella azteca*) accounted for 60% of the collected macroinvertebrates, whereas Chironomid larvae were the second most abundant taxa (16%). Three taxa within Ephemeroptera, Plecoptera, and Tricoptera were collected. No threatened or endangered invertebrates were found within Galum Creek.

Freshwater fish were sampled on June 18, 2014 using a 10'x4' 1/8" minnow seine. The net was hauled approximately 10 feet across the stream at 4 locations. Fish were stored in a container of water and then immediately identified to species in the field. Juvenile specimens smaller than 20 mm were not identified and immediately released following enumeration. Following identification and enumeration all fish were returned to location from which they were collected. Five species of fish were collected, along with one unidentified juvenile species. The only adult species encountered was *Etheostoma nigrum* (Johnny darter). Juvenile species encountered included *Fundulus notatus* (Blackstripe topminnow), *Carpodes carpio* (River carpsucker) and *Lepomis cyanellus* (green sunfish). There were a total of 63 individual fish collected, with 34 being adults and 29 being juveniles. No threatened or endangered fish species were found within Galum Creek.

**Antidegradation Assessment
Knight Hawk Coal, LLC – Prairie Eagle Mine
NPDES Permit No. IL0077658
Perry County**

The freshwater mussel community was assessed on June 16 and 18, 2014, using USEPA methods as described in *An Introduction to Freshwater Mussels as Biological Indicators*. Hand searching techniques were used to thoroughly search for freshwater mussels within a 100 ft stretch of the stream. No native freshwater mussels were located in the sampling area, but several non-native Asian clams (*Corbicula fulminea*) were collected. No threatened or endangered freshwater mussels were encountered.

Identification of Proposed Pollutant Load Increases or Potential Impacts on Uses.

All chemical parameters analyzed in stream samples and underground pumpage were found to be attaining acute and chronic water quality standards. When compared to stream results, Outfall 007 discharges may contribute slight increases of chloride and sulfate loadings to Galum Creek due to underground pumpage contributions. However, the increases in chloride and sulfate loadings would be negligible and are not anticipated to adversely impact the uses of Galum Creek.

Fate and Effect of Parameters Proposed for Increased Loading.

Sulfate and chloride would remain dissolved in the water and would move through the downstream continuum. Small amounts would be removed by organisms as these substances are necessary for life. No adverse impacts to streams would occur as all water quality standards are expected to be met in the receiving water.

Purpose and Social & Economic Benefits of the Proposed Activity.

The proposed activity would allow the Applicant to continue to extract the coal resources at the site. The Applicant's November 25, 2014 document entitled *Assessment of Alternatives for Minimal Environmental Degradation and Economic Benefit Analysis* included a comprehensive summary of the project benefits, including but not limited to: providing an affordable, reliable, and secure fuel for electricity production; providing continued staffing of approximately 200 direct full time employees with an annual payroll of \$26.6 million including benefits; providing continued employment of contract employees through additional spin-off jobs; and providing direct and indirect tax revenue to the local and regional economy.

Assessments of Alternatives for Less Increase in Loading or Minimal Environmental Degradation.

The use of a sedimentation basin and NPDES outfall for treatment of stormwater runoff and underground mine pumpage is the most practical, efficient, and economical method of treating and minimizing pollutants from the project area. A comprehensive assessment of alternatives and options to minimize the potential increases in pollutant loading from the project was conducted by the Applicant and provided in the November 25, 2014 document entitled *Assessment of Alternatives for Minimal Environmental Degradation and Economic Benefit Analysis*. This assessment included consideration of the following alternatives, each of which was considered infeasible or impractical: no mining; not constructing the sedimentation basin; constructing the sedimentation basin in a different location; no discharge of flows from the site (zero discharge sedimentation basin), underground injection, discharge of water to publicly-owned treatment works; and alternative onsite treatment technologies including reverse osmosis, filtration, bioremediation, coagulation, ion exchange, cost effective sulfate removal, supervac, and manganese treatment. It is impractical to further evaluate these alternatives given that pollutant load increases are expected to be negligible and all water quality standards for parameters associated with this facility are expected to be attained in Outfall 007 effluent and in Galum Creek.

Summary Comments of the Illinois Department of Natural Resources, Regional Planning Commissions, Zoning Boards or Other Entities.

The IDNR EcoCAT system was consulted on October 7, 2014 in regards to the proposed activities. It was determined that no threatened or endangered species or protected natural areas are in the vicinity of the areas. Consultation was immediately terminated in the October 7, 2014 automated reply from IDNR.

Agency Conclusion.

This preliminary assessment was conducted pursuant to the Illinois Pollution Control Board regulation for Antidegradation found at 35 Ill. Adm. Code 302.105 (antidegradation standard) and was based on the information available to the Agency at the time the draft permit was written. We tentatively find that the proposed activity would result in the attainment of water quality standards; that all existing uses of the receiving stream would be maintained; that all technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loading have been incorporated into the proposed activity; and that this activity would benefit the community at large by preserving existing mining jobs and the ancillary economic benefits of these jobs to the local economy. Comments received during the NPDES permit public notice period will be evaluated before a final decision is made by the Agency.

NPDES Permit No. IL0077658
Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue, East
P.O. Box 19276
Springfield, Illinois 62794-9276

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Modified NPDES Permit

Expiration Date: February 28, 2018

Issue Date: March 8, 2013
Effective Date: March 8, 2013
Modification Date: November 1, 2013
Modification Date:

Name and Address of Permittee:

Knight Hawk Coal, L.L.C.
500 Cutler-Trico Road
Percy, Illinois 62272

Facility Name and Address:

Knight Hawk Coal, L.L.C.
Prairie Eagle Mine
1 ½ miles northwest of Cutler, Illinois
(Perry County)

Discharge Number and Classification:

002, 003, 004 Alkaline Mine Drainage

001, 005 Alkaline Mine Drainage

007 Alkaline Mine Drainage

Receiving waters

Permanent post-mining impoundments (from previous Mining operation) thence to unnamed tributaries to North Fork Cox Creek

Permanent post-mining impoundments (from previous mining operation) thence to unnamed tributaries to Rock Fork

Unnamed tributary to Galum Creek

In compliance with the provisions of the Illinois Environmental Protection Act, Subtitle C and/or Subtitle D Rules and Regulations of the Illinois Pollution Control Board, and the Clean Water Act, the above-named permittee is hereby authorized to discharge at the above location to the above-named receiving stream in accordance with the standard conditions and attachments herein.

Permittee is not authorized to discharge after the above expiration date. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit the proper application as required by the Illinois Environmental Protection Agency (IEPA) not later than 180 days prior to the expiration date.

Joseph D. Stitely, Acting Permit Manager
Mine Pollution Control Program
Bureau of Water

LDC:DM:cs/6968c/12-29-14

NPDES Coal Mine Permit

NPDES Permit No. IL0077658

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 001 (Alkaline Mine Drainage)

| Discharge Condition | Parameters | | | | | | | | | | | | |
|---------------------|-----------------------------------|---------------|-------------------------|---------------|-----------------|-------------------------|--------------------|---------------------|-----------------------|--------------|--------------------------------------|-----------------------|--------------------------|
| | Total Suspended Solids (mg/l) *** | | Iron (total) (mg/l) *** | | pH** (S.U.) *** | Alkalinity/ Acidity *** | Sulfate (mg/l) *** | Chloride (mg/l) *** | Mn (total) (mg/l) *** | Hardness *** | Mercury see Special Condition No. 15 | Flow (MGD) | Settleable Solids (ml/l) |
| | 30 day average | daily maximum | 30 day average | daily maximum | | | | | | | | | |
| I | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1850 | 500 | 1.0 | Monitor only | Monitor only | Measure When Sampling | - |
| II | - | - | - | - | 6.0-9.0 | - | 1850 | 500 | - | Monitor only | - | Measure When Sampling | 0.5 |
| III | - | - | - | - | 6.0-9.0 | - | 1850 | 500 | - | Monitor only | - | Measure When Sampling | - |
| IV | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1850 | 500 | 1.0 | Monitor only | Monitor only | Measure When Sampling | - |

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 13 for the discharges from Outfall 001 and the unnamed tributary to Rock Fork receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Coal Mine Permit

NPDES Permit No. IL0077658

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 002, 005 (Alkaline Mine Drainage)

| Discharge Condition | Parameters | | | | | | | | | | | | |
|---------------------|-----------------------------------|---------------|-------------------------|---------------|-----------------|-------------------------|--------------------|---------------------|-----------------------|--------------|--------------------------------------|-----------------------|--------------------------|
| | Total Suspended Solids (mg/l) *** | | Iron (total) (mg/l) *** | | pH** (S.U.) *** | Alkalinity/ Acidity *** | Sulfate (mg/l) *** | Chloride (mg/l) *** | Mn (total) (mg/l) *** | Hardness *** | Mercury see Special Condition No. 15 | Flow (MGD) | Settleable Solids (ml/l) |
| | 30 day average | daily maximum | 30 day average | daily maximum | | | | | | | | | |
| I | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1700 | 500 | 1.0 | Monitor only | Monitor only | Measure When Sampling | - |
| II | - | - | - | - | 6.0-9.0 | - | 1700 | 500 | - | Monitor only | - | Measure When Sampling | 0.5 |
| III | - | - | - | - | 6.0-9.0 | - | 1700 | 500 | - | Monitor only | - | Measure When Sampling | - |
| IV | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1700 | 500 | 1.0 | Monitor only | Monitor only | Measure When Sampling | - |

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 13 for the discharges from Outfall 002 and the unnamed tributary to North Fork Cox Creek and Outfall 005 and the unnamed tributary to Rock Fork receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Coal Mine Permit

NPDES Permit No. IL0077658

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 003 (Alkaline Mine Drainage)

| Discharge Condition | Parameters | | | | | | | | | | |
|---------------------|-----------------------------------|---------------|-------------------------|---------------|-----------------|-------------------------|--------------------|---------------------|--------------|-----------------------|--------------------------|
| | Total Suspended Solids (mg/l) *** | | Iron (total) (mg/l) *** | | pH** (S.U.) *** | Alkalinity/ Acidity *** | Sulfate (mg/l) *** | Chloride (mg/l) *** | Hardness *** | Flow (MGD) | Settleable Solids (ml/l) |
| | 30 day average | daily maximum | 30 day average | daily maximum | | | | | | | |
| I | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1500 | 500 | Monitor only | Measure When Sampling | - |
| II | - | - | - | - | 6.0-9.0 | - | 1500 | 500 | Monitor only | Measure When Sampling | 0.5 |
| III | - | - | - | - | 6.0-9.0 | - | 1500 | 500 | Monitor only | Measure When Sampling | - |
| IV | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1500 | 500 | Monitor only | Measure When Sampling | - |

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 13 for the discharges from Outfall 003 and the unnamed tributary to North Fork Cox Creek receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Coal Mine Permit

NPDES Permit No. IL0077658

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 004 (Alkaline Mine Drainage)

| Discharge Condition | Parameters | | | | | | | | | | |
|---------------------|-----------------------------------|---------------|-------------------------|---------------|-----------------|-------------------------|--------------------|---------------------|--------------|-----------------------|--------------------------|
| | Total Suspended Solids (mg/l) *** | | Iron (total) (mg/l) *** | | pH** (S.U.) *** | Alkalinity/ Acidity *** | Sulfate (mg/l) *** | Chloride (mg/l) *** | Hardness *** | Flow (MGD) | Settleable Solids (ml/l) |
| | 30 day average | daily maximum | 30 day average | daily maximum | | | | | | | |
| I | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1000 | 500 | Monitor only | Measure When Sampling | - |
| II | - | - | - | - | 6.0-9.0 | - | 1000 | 500 | Monitor only | Measure When Sampling | 0.5 |
| III | - | - | - | - | 6.0-9.0 | - | 1000 | 500 | Monitor only | Measure When Sampling | - |
| IV | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1000 | 500 | Monitor only | Measure When Sampling | - |

I Dry weather discharge (base flow or mine pumpage) from the outfall.

II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.

III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).

IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 13 for the discharges from Outfall 004 and the unnamed tributary to North Fork Cox Creek receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Coal Mine Permit

NPDES Permit No. IL0077658

Effluent Limitations and Monitoring

From the effective date of this Permit until the expiration date, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 007 (Alkaline Mine Drainage)

| Discharge Condition | Parameters | | | | | | | | | | | | |
|---------------------|-----------------------------------|---------------|-------------------------|---------------|-----------------|-------------------------|--------------------|---------------------|-----------------------|---------------|--------------|-----------------------|--------------------------|
| | Total Suspended Solids (mg/l) *** | | Iron (total) (mg/l) *** | | pH** (S.U.) *** | Alkalinity/ Acidity *** | Sulfate (mg/l) *** | Chloride (mg/l) *** | Mn (total) (mg/l) *** | | Hardness *** | Flow (MGD) | Settleable Solids (ml/l) |
| | 30 day average | daily maximum | 30 day average | daily maximum | | | | | 30 day average | daily maximum | | | |
| I | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1850 | 500 | 2.0 | 4.0 | Monitor only | Measure When Sampling | - |
| II | - | - | - | - | 6.0-9.0 | - | 1850 | 500 | - | - | Monitor only | Measure When Sampling | 0.5 |
| III | - | - | - | - | 6.0-9.0 | - | 1850 | 500 | - | - | Monitor only | Measure When Sampling | - |
| IV | 35 | 70 | 3.0 | 6.0 | 6.5-9.0 | Alk.>Acid | 1850 | 500 | 2.0 | 4.0 | Monitor only | Measure When Sampling | - |

- I Dry weather discharge (base flow or mine pumpage) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.110(a), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b). The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.
- III In accordance with 35 Ill. Adm. Code 406.110(d), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.106(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For outfalls which have no allowed mixing, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method.

*** There shall be a minimum of nine (9) samples collected during the quarter when the pond is discharging. Of these 9 samples, a minimum of one sample each month shall be taken during either Discharge Condition I or IV should such discharge condition occur. A "no flow" situation is not considered to be a sample of the discharge. In the event that Discharge Conditions II and/or III occur, grab sample of each discharge caused by the above precipitation events (Discharge Conditions II and/or III) shall be taken and analyzed for the parameters identified in the table above during at least 3 separate events each quarter. For quarters in which there are less than 3 such precipitation events resulting in discharges, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s). Should a sufficient number of discharge events occur during the quarter, the remaining three (3) quarterly samples may be taken during any of the Discharge Conditions described above.

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 13 for the discharges from Outfall 007 and unnamed tributary to Galum Creek receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Coal Mine Permit

NPDES Permit No. IL0077658

Effluent Limitations and Monitoring

Upon completion of Special Condition 10 and approval from the Agency, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 001, 007 (Reclamation Area Drainage)

| Discharge Condition | Parameters | | | | | |
|---------------------|-----------------------|--------------------------|---------------------------|-----------------|-----------------------|---------------------------------------|
| | pH** (S.U.) *** | Sulfate (mg/l) *** | Chloride (mg/l) *** | Hardness *** | Flow (MGD) | Settleable Solids (ml/l) *** |
| I | 6.5-9.0 | 1850 | 500 | Monitor only | Measure When Sampling | 0.5 |
| II | 6.0-9.0 | 1850 | 500 | Monitor only | Measure When Sampling | 0.5 |
| III | 6.0-9.0 | 1850 | 500 | Monitor only | Measure When Sampling | - |
| IV | 6.5-9.0 | 1850 | 500 | Monitor only | Measure When Sampling | 0.5 |

- I Dry weather discharge (base flow, if present) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.109(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations. The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.
- III In accordance with 35 Ill. Adm. Code 406.109(c), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.109(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For reclamation area discharges, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method. A "no flow" situation is not considered to be a sample of the discharge.

*** One sample per month (1/month) shall be collected if and/or when a discharge occurs under either Discharge Condition I, II or IV and analyzed for the parameters identified in the table above. In addition, at least three (3) grab samples shall be taken each quarter from separate precipitation events under Discharge Condition III and analyzed for parameters indicated in the above table. For quarters in which there are less than 3 such precipitation events, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s).

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 13 for the discharges from Outfall 001 and the unnamed tributary to Rock Fork and Outfall 007 and unnamed tributary to Galum Creek receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Coal Mine Permit

NPDES Permit No. IL0077658

Effluent Limitations and Monitoring

Upon completion of Special Condition 10 and approval from the Agency, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 002, 005 (Reclamation Area Drainage)

| Discharge Condition | Parameters | | | | | |
|---------------------|-----------------------|--------------------------|---------------------------|-----------------|-----------------------|---------------------------------------|
| | pH** (S.U.) *** | Sulfate (mg/l) *** | Chloride (mg/l) *** | Hardness *** | Flow (MGD) | Settleable Solids (ml/l) *** |
| I | 6.5-9.0 | 1700 | 500 | Monitor only | Measure When Sampling | 0.5 |
| II | 6.0-9.0 | 1700 | 500 | Monitor only | Measure When Sampling | 0.5 |
| III | 6.0-9.0 | 1700 | 500 | Monitor only | Measure When Sampling | - |
| IV | 6.5-9.0 | 1700 | 500 | Monitor only | Measure When Sampling | 0.5 |

- I Dry weather discharge (base flow, if present) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.109(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations. The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.
- III In accordance with 35 Ill. Adm. Code 406.109(c), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.109(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For reclamation area discharges, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method. A "no flow" situation is not considered to be a sample of the discharge.

*** One sample per month (1/month) shall be collected if and/or when a discharge occurs under either Discharge Condition I, II or IV and analyzed for the parameters identified in the table above. In addition, at least three (3) grab samples shall be taken each quarter from separate precipitation events under Discharge Condition III and analyzed for parameters indicated in the above table. For quarters in which there are less than 3 such precipitation events, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s).

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 13 for the discharges from Outfall 002 and the unnamed tributary to North Fork Cox Creek and Outfall 005 and the unnamed tributary to Rock Fork receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

NPDES Coal Mine Permit

NPDES Permit No. IL0077658

Effluent Limitations and Monitoring

Upon completion of Special Condition 10 and approval from the Agency, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 003 (Reclamation Area Drainage)

| Discharge Condition | Parameters | | | | | |
|---------------------|-----------------------|--------------------------|---------------------------|-----------------|-----------------------|---------------------------------------|
| | pH** (S.U.) *** | Sulfate (mg/l) *** | Chloride (mg/l) *** | Hardness *** | Flow (MGD) | Settleable Solids (ml/l) *** |
| I | 6.5-9.0 | 1500 | 500 | Monitor only | Measure When Sampling | 0.5 |
| II | 6.0-9.0 | 1500 | 500 | Monitor only | Measure When Sampling | 0.5 |
| III | 6.0-9.0 | 1500 | 500 | Monitor only | Measure When Sampling | - |
| IV | 6.5-9.0 | 1500 | 500 | Monitor only | Measure When Sampling | 0.5 |

- I Dry weather discharge (base flow, if present) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.109(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations. The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.
- III In accordance with 35 Ill. Adm. Code 406.109(c), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.109(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For reclamation area discharges, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method. A "no flow" situation is not considered to be a sample of the discharge.

*** One sample per month (1/month) shall be collected if and/or when a discharge occurs under either Discharge Condition I, II or IV and analyzed for the parameters identified in the table above. In addition, at least three (3) grab samples shall be taken each quarter from separate precipitation events under Discharge Condition III and analyzed for parameters indicated in the above table. For quarters in which there are less than 3 such precipitation events, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s).

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 13 for the discharges from Outfall 003 and the unnamed tributary to North fork Cox Creek receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

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Effluent Limitations and Monitoring

Upon completion of Special Condition 10 and approval from the Agency, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfall*: 004 (Reclamation Area Drainage)

| Discharge Condition | Parameters | | | | | |
|---------------------|-----------------------|--------------------------|---------------------------|-----------------|-----------------------|---------------------------------------|
| | pH** (S.U.) *** | Sulfate (mg/l) *** | Chloride (mg/l) *** | Hardness *** | Flow (MGD) | Settleable Solids (ml/l) *** |
| I | 6.5-9.0 | 1000 | 500 | Monitor only | Measure When Sampling | 0.5 |
| II | 6.0-9.0 | 1000 | 500 | Monitor only | Measure When Sampling | 0.5 |
| III | 6.0-9.0 | 1000 | 500 | Monitor only | Measure When Sampling | - |
| IV | 6.5-9.0 | 1000 | 500 | Monitor only | Measure When Sampling | 0.5 |

- I Dry weather discharge (base flow, if present) from the outfall.
- II In accordance with 35 Ill. Adm. Code 406.109(b), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations. The 10-year, 24-hour precipitation event for this area is considered to be 4.76 inches.
- III In accordance with 35 Ill. Adm. Code 406.109(c), any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period greater than the 10-year, 24-hour precipitation event (or snowmelt or equivalent volume) shall comply with the indicated limitations instead of those in 35 Ill. Adm. Code 406.109(b).
- IV Discharges continuing 24 hours after cessation of precipitation event that resulted in discharge. For reclamation area discharges, monitoring requirements and permit limitations of Discharge Condition IV are identical to Discharge Condition I to which the outfall discharge has reverted.

Sampling during all Discharge Conditions shall be performed utilizing the grab sampling method. A "no flow" situation is not considered to be a sample of the discharge.

*** One sample per month (1/month) shall be collected if and/or when a discharge occurs under either Discharge Condition I, II or IV and analyzed for the parameters identified in the table above. In addition, at least three (3) grab samples shall be taken each quarter from separate precipitation events under Discharge Condition III and analyzed for parameters indicated in the above table. For quarters in which there are less than 3 such precipitation events, a grab sample of the discharge shall be required whenever such precipitation event(s) occur(s).

The water quality standards for sulfate and chloride must be met in discharges from the above referenced outfall as well as in the receiving stream.

* The Permittee is subject to the limitations, and monitoring and reporting requirements of Special Condition No. 13 for the discharges from Outfall 004 and the unnamed tributary to North Fork Cox Creek receiving such discharges.

** No discharge is allowed from any above referenced permitted outfall during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

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Effluent Limitations and Monitoring

Upon completion of Special Condition No. 11 and approval from the Agency, the effluent of the following discharge shall be monitored and limited at all times as follows:

Outfalls: 001, 002, 003, 004, 005, 007 (Stormwater Discharge)

| Parameters | |
|---------------------|-----------------------------------|
| pH* (S.U.) ** | Settleable Solids (ml/l) ** |
| 6.0-9.0 | 0.5 |

Stormwater discharge monitoring is subject to the following reporting requirements:

Analysis of samples must be submitted with second quarter Discharge Monitoring Reports.

If discharges can be shown to be similar, a plan may be submitted by November 1 of each year preceding sampling to propose grouping of similar discharges and/or updated previously submitted groupings. If updating of a previously submitted plan is not necessary, a written notification to the Agency, indicating such is required. Upon approval from the Agency, one representative sample for each group may be submitted.

Annual stormwater monitoring is required for all discharges until Final SMCRA Bond is released and approval to cease such monitoring is obtained from the Agency.

* No discharge is allowed from any above referenced permitted outfalls during "low flow" or "no flow" conditions in the receiving stream unless such discharge meets the water quality standards of 35 Ill. Adm. Code 302.204 for pH.

** One (1) sample per year shall be collected and analyzed for the indicated parameter; however, such sampling and analysis is required only if and/or when a discharge occurs from the individual Outfall(s) identified above.

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Authorization is hereby granted to the above designee to construct the mine and mine refuse area described as follows:

A coal mine with both surface and underground operations containing a total of 1980.8 acres, also identified as IDNR/OMM Permit 372 and 377, located in Sections 5, 6 and 7, Township 6 South, Range 4 West and Sections 29, 30, 31 and 32, Township 5 South, Range 4 West, 3rd P.M., Perry County, Illinois, and described as follows:

The mine facilities include a preparation plant, coal stockpiles, office, bathhouse, warehouse, roads, diversions and a number of surface impoundments. The following additional areas are being added to the original facilities and area approved for this operation.

An additional area of 5.7 acres, identified as IBR No. 6 to OMM Permit No. 372 area, located in Section 32, Township 5 South, Range 4 West, in Perry County, Illinois. As proposed and depicted in IEPA Log Nos. 1505-07 and 1507-07-A, soil stockpiles and electric distribution cable will be located within the area with runoff tributary to the active pit identified as Boxcut No. 8. Pit pumpage will be routed to non-discharging Sump 011. This additional area is included in the total permit area cited above.

An additional area of 20.0 acres, identified as IBR No. 7 to OMM Permit No. 372 area, located in Section 32, Township 5 South, Range 4 West, in Perry County, Illinois. As proposed and depicted in IEPA Log Nos. 0482-08 and 0482-08-A, this acreage will be used for additional mining area. Surface runoff will be tributary to the active pit identified as Boxcut No. 8. Pit pumpage will be routed to non-discharging Sump 011. This additional area is included in the total permit area cited above.

An additional area of 20.0 acres, identified as IBR No. 11 to OMM Permit No. 372 area, located in Section 32, Township 5 South, Range 4 West, in Perry County, Illinois. As proposed and depicted in IEPA Log Nos. 7105-11 and 7105-11-B, this acreage will be used for placement of overburden stockpiles. Surface Runoff will be tributary to non-discharging Sumps A and B. This additional area is included in the total permit area cited above.

An additional area of 20.0 acres, identified as IBR No. 12 to OMM Permit No. 372 area, located in Section 32, Township 5 South, Range 4 West, in Perry County, Illinois. As proposed and depicted in IEPA Log Nos. 7200-11 and 7200-11-B, this acreage will be used to develop Sumps A and B and construct Ditch No. 22. Surface runoff from this area will be tributary to non-discharging Sumps A and B. This additional area is included in the total permit area cited above.

An additional area of 20.0 acres, identified as IBR No. 13 to OMM Permit No. 372 area, located in Section 32, Township 5 South, Range 4 West, in Perry County, Illinois. As proposed and depicted in IEPA Log Nos. 7397-11 and 7397-11-A, this acreage will be used to develop an overburden stockpile. Surface runoff will be tributary to non-discharging Sumps A and B. This additional area is included in the total permit area cited above.

An additional area of 6.0 acres, identified as an IBR to OMM Permit No. 372 area, located in Section 32, Township 5 South, Range 4 West, in Perry County, Illinois. As proposed and depicted in IEPA Log Nos. 7549-11 and 7549-11-A, this acreage will be used to recover highwall mining equipment as well as for surface mining activities. Surface runoff will be tributary to the active pit with pit pumpage routed to non-discharging Sumps. This additional area is included in the total permit area cited above.

An additional area of 20.0 acres, identified as an IBR to OMM Permit No. 372 area, located in Sections 31 and 32, Township 5 South, Range 4 West, in Perry County, Illinois. As proposed and depicted in IEPA Log Nos. 6035-12 and 6035-12-B, this acreage will be used to develop fine coal (slurry) refuse disposal area identified as Sump 012A. Surface runoff from this additional area will be tributary to Slurry Sump 012A. This additional area is included in the total permit area cited above. Please refer to discussion below for additional details regarding Sump 012A.

An additional area of 3.5 acres, identified as an IBR to OMM Permit No. 372 area, located in Section 32, Township 5 South, Range 4 West, in Perry County, Illinois. As proposed and depicted in IEPA Log No. 6561-12, 2.0 acres of this will be used to obtain borrow material to construct embankments in Sump 012A and 1.5 acres will be used to extend mining southward. Surface drainage will be tributary to Sump 012A and the active pit, respectively. This additional area is included in the total permit acreage cited above.

An additional area of 20.0 acres, identified as an IBR to OMM Permit No. 372 area, located in Section 32, Township 5 South, Range 4 West, in Perry County, Illinois. As proposed and depicted in IEPA Log No. 6426-12, this acreage will be used to develop fine coal (slurry) refuse disposal area identified as Sump 012B. Surface runoff from this additional area will be tributary to Slurry Sump 012B. This additional area is included in the total permit area cited above. Please refer to discussion below for additional details regarding Sump 012B.

The mining plan includes the development of boxcuts where highwall miners will be utilized to excavate coal laterally. For most of the operation, the only disturbed areas from mining will be the areas immediately adjacent to the boxcuts. Traditional surface mining will be conducted in limited areas.

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The mining operation plan for this facility is revised to include the following:

As proposed and depicted in IEPA Log No. 7132-11 the mining operation plan is revised to include Access Road A, Retail Haul Roads A and B and a small parking area.

The surface drainage control plan is revised to include Collector Ditches on the north side of the OMM Permit No. 377 Pit (IEPA Log Nos. 0110-08, 0140-08 and 0223-08) and Diversion Ditch 21A to route drainage south of the OMM Permit No. 377 Pit into the final cut (IEPA Log Nos. 0435-08 and 0435-08-A).

As proposed and depicted in IEPA Log No. 0144-08 a Conveyor Belt structure will be constructed from the underground portal to the raw coal stockpile. In addition Diversion Ditch 13D will be constructed south of the east end of Boxcut No. 5.

As proposed and depicted in IEPA Log No. 1393-07 a temporary coal stockpile may be developed within the mined spoil near the preparation plant. Surface runoff from this coal stockpile area will be routed to the coal processing circuit.

As proposed and depicted in IEPA Log No. 9545-09 a temporary coal stockpile may be developed within the mined spoil. Surface runoff from this coal stockpile area will be routed to approved sediment control areas.

As proposed and depicted in IEPA Log No. 7385-11 an overflow coal stockpile may be developed between Retail Haul Road A and B. Surface runoff from this coal stockpile area will be controlled by Collector Ditches 1F and 1B and will be conveyed to non-discharging Sump 001.

As proposed and depicted in IEPA Log No. 6334-12 various modifications to the preparation plant will be implemented which includes additional conveyor belts, concrete stacker, concrete reclaim tunnel, truck loadout and a clean coal stockpile.

Five (5) discharges identified as Outfalls 001, 002, 003, 004 and 005, all classified as alkaline mine drainage, are located at this facility. Outfall Nos. 002, 003 and 004 report to existing post-mining permanent impoundments from a previous mining operation then to an unnamed tributary to North Fork Cox Creek, while Outfall Nos. 001 and 005 report to existing post-mining permanent impoundments from a previous mining operation then to an unnamed tributary to Rock Fork. These impoundments are identified as sumps on the Operations Plans Drawings.

Location and receiving stream of the Outfalls at this facility is as follows:

| Outfall Number | Latitude | | | Longitude | | | Receiving Water |
|----------------|----------|-----|-------|-----------|-----|-------|---|
| | DEG | MIN | SEC | DEG | MIN | SEC | |
| 001 | 38° | 04' | 17.3" | 89° | 33' | 27.7" | Unnamed tributary to Rock Fork |
| 002 | 38° | 02' | 46.8" | 89° | 35' | 31.1" | Unnamed tributary to North Fork Cox Creek |
| 003 | 38° | 02' | 07.0" | 89° | 35' | 36.0" | Unnamed tributary to North Fork Cox Creek |
| 004 | 38° | 02' | 02.0" | 89° | 35' | 36.0" | Unnamed tributary to North Fork Cox Creek |
| 005 | 38° | 04' | 02.8" | 89° | 33' | 30.7" | Unnamed tributary to Rock Fork |

A pre-law inclines is currently being used as a slurry disposal impoundment with water being returned to the preparation plant. Slurry disposal area expansion into Cell B will be developed as proposed and described in IEPA Log No. 2188-06 (OMM Permit No. 372, IPR No. 17). In addition, the original Slurry Cell will be modified to develop additional Cells C and D as described and depicted in IEPA Log No. 2221-06 (OMM Permit No. 372, IPR No. 13). Groundwater monitoring for the original slurry cell, as well as the cells B, C and D will consist of monitoring Well No. MW-3.

As discussed above and described in IEPA Log Nos. 6035-12 and 6035-12-B, a portion of a pre-law incline will be developed into a slurry disposal impoundment identified as Sump 012A. This slurry disposal area will be operated to allow discharges into adjacent Slurry Sump 012B (discussed below) or as a non-discharging impoundment with water collecting in Sump 012A will either be returned to the coal processing circuit or pumped to other onsite non-discharging Sumps. Groundwater monitoring for Sump 012A will consist of Monitoring Well No. MW-11 as depicted in IEPA Log No. 6035-12-B and subject to Condition No. 14.

As discussed above and described in IEPA Log No. 6426-12, a portion of a pre-law incline immediately east of Slurry Sump 012A will be developed into a slurry disposal impoundment identified as Sump 012B. This slurry disposal area will be operated as a non-discharging impoundment with water collecting in Sump 012B either being returned to the coal processing circuit or pumped to other onsite non-

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discharging sumps. Development of Slurry Sump 012B shall be subject to the requirements of Condition No. 13 as well as groundwater monitoring requirements of Condition No. 14.

Refuse from the preparation plant will be disposed in the bottom of the active pit as proposed in Log Nos. 4412-04, 4412-04-A and 3368-05.

Refuse Disposal Areas A and B will be developed and constructed as proposed in IEPA Log Nos. 8185-10, 8185-10-A, 8185-10-C and 7251-11. A compacted clay liner of two (2) foot thickness will be constructed beneath refuse disposal area A and B. Foundation preparation and liner construction for these areas shall be in accordance with the specifications and testing requirements of Condition No. 12. Groundwater monitoring for refuse disposal areas A and B shall consist of Monitoring Well Nos. MW-5, MW-6 and MW-7. Refer to discussion below and Condition No. 14 for groundwater monitoring requirements.

As proposed in IEPA Log No. 6377-12, Groundwater Monitoring Well No. MW-1 will be abandoned and properly sealed due to damage to the well casing. The Agency has determined that replacement of this well will not be required.

Groundwater monitoring for this area includes Monitoring Well Nos. MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-11, MW-12, UG-MW-01 and UG-MW-02. Groundwater monitoring requirements are outlined in Condition No. 14.

The abandonment plan shall be executed and completed in accordance with 35 Ill. Adm. Code 405.109.

All water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.202. For the constituents not covered by Parts 302 or 303, all water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.106.

This Authorization is issued subject to the following Conditions. If such Conditions require additional or revised facilities, satisfactory engineering plan documents must be submitted to this Agency for review and approval to secure issuance of a Supplemental Authorization to Construct.

1. If any statement or representation is found to be incorrect, this permit may be revoked and the permittee thereupon waives all rights thereunder.
2. The issuance of this permit (a) shall not be considered as in any manner affecting the title of the premises upon which the mine or mine refuse area is to be located; (b) does not release the permittee from any liability for damage to person or property caused by or resulting from the installation, maintenance or operation of the proposed facilities; (c) does not take into consideration the structural stability of any units or parts of the project; and (d) does not release the permittee from compliance with other applicable statutes of the State of Illinois, or with applicable local laws, regulations or ordinances.
3. Final plans, specifications, application and supporting documents as submitted by the person indicated on Page 1 as approved shall constitute part of this permit in the records of the Illinois Environmental Protection Agency.
4. There shall be no deviations from the approved plans and specifications unless revised plans, specifications and application shall first have been submitted to the Illinois Environmental Protection Agency and a supplemental permit issued.
5. The permit holder shall notify the Environmental Protection Agency (217/782-3637) immediately of an emergency at the mine or mine refuse area which causes or threatens to cause a sudden discharge of contaminants into the waters of Illinois and shall immediately undertake necessary corrective measures as required by 35 Ill. Adm. Code 405.111. (217/782-3637 for calls between the hours of 5:00 p.m. to 8:30 a.m. and on weekends.)
6. The termination of an NPDES discharge monitoring point or cessation of monitoring of an NPDES discharge is not authorized by this Agency until the permittee submits adequate justification to show what alternate treatment is provided or that untreated drainage will meet applicable effluent and water quality standards.
7. Initial construction activities in areas to be disturbed shall be for collection and treatment facilities only. Prior to the start of other activities, surface drainage controls shall be constructed and operated to avoid violations of the Act or Subtitle D. At such time as runoff water is collected in the sedimentation pond, a sample shall be collected and analyzed, for the parameters designated as 1M through 15M under Part 5-C of Form 2C and the effluent parameters designated herein with the results sent to this Agency. Should additional treatment be necessary to meet the standards of 35 Ill. Adm. Code 406.106, a Supplemental Permit must be obtained. Discharge from ponds is not allowed unless applicable effluent and water quality standards are met in the basin discharge(s).

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8. This Agency must be informed in writing and an application submitted if drainage, which was previously classified as alkaline (pH greater than 6.0), becomes acid (pH less than 6.0) or ferruginous (base flow with an iron concentration greater than 10 mg/l). The type of drainage reporting to the basin should be reclassified in a manner consistent with the applicable rule of 35 Ill. Adm. Code 406 as amended in R84-29 at 11 Ill. Reg. 12899. The application should discuss the treatment method and demonstrate how the discharge will meet the applicable standards.
9. A permittee has the obligation to add a settling aid if necessary to meet the suspended solids or settleable solids effluent standards. The selection of a settling aid and the application practice shall be in accordance with a. or b. below
 - a. Alum ($\text{Al}_2(\text{SO}_4)_3$), hydrated lime ($\text{Ca}(\text{OH})_2$), soda ash (Na_2CO_3), alkaline pit pumpage, acetylene production by-product (tested for impurities), and ground limestone are acceptable settling aids and are hereby permitted for alkaline mine drainage sedimentation ponds.
 - b. Any other settling aids such as commercial flocculents and coagulants are permitted only on prior approval from the Agency. To obtain approval a permitted must demonstrate in writing to the Agency that such use will not cause a violation of the toxic substances standard of 35 Ill. Adm. Code 302.210 or of the appropriate effluent and water quality standards of 35 Ill. Adm. Code parts 302, 304, and 406.
10. A general plan for the nature and disposition of all liquids used to drill boreholes shall be filed with this Agency prior to any such operation. This plan should be filed at such time that the operator becomes aware of the need to drill unless the plan of operation was contained in a previously approved application.
11. Any of the following shall be a violation of the provisions required under 35 Ill. Adm. Code 406.202:
 - a. It is demonstrated that an adverse effect on the environment in and around the receiving stream has occurred or is likely to occur.
 - b. It is demonstrated that the discharge has adversely affected or is likely to adversely affect any public water supply.
 - c. The Agency determines that the permittee is not utilizing Good Mining Practices in accordance with 35 Ill. Adm. Code 406.204 which are fully described in detail in Sections 406.205, 406.206, 406.207 and 406.208 in order to minimize the discharge of total dissolved solids, chloride, sulfate, iron and manganese. To the extent practical, such Good Mining Practices shall be implemented to:
 - i. Stop or minimize water from coming into contact with disturbed areas through the use of diversions and/or runoff controls (Section 406.205).
 - ii. Retention and control within the site of waters exposed to disturbed materials utilizing erosion controls, sedimentation controls, water reuse or recirculation, minimization of exposure to disturbed materials, etc. (Section 406.206).
 - iii. Control and treatment of waters discharged from the site by regulation of flow of discharges and/or routing of discharges to more suitable discharge locations (Section 406.207).
 - iv. Utilized unconventional practices to prevent the production or discharge of waters containing elevated contaminant concentrations such as diversion of groundwater prior to entry into a surface or underground mine, dewatering practices to remove clean water prior to contacting disturbed materials and/or any additional practices demonstrated to be effective in reducing contaminant levels in discharges (Section 406.208).
12. The two (2) foot compacted clay liners to be constructed beneath refuse disposal areas A and B shall be subject to the following specifications and procedures as detailed in IEPA Log No. 8185-10-C.
 - a. All trees and/or roots that may compromise liner integrity will be thoroughly removed and the area properly backfilled and compacted.
 - b. To obtain the two (2) foot thick liner, the upper one (1) foot of spoil material will be removed and the underlying twelve (12) inches of material conditioned and compacted to a minimum 95% standard proctor. The removed upper material will be replaced and compacted. Compacted effort on both liner lifts shall be sufficient to achieve a permeability of 1×10^{-7} cm/s, or less.

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- c. A sufficient number of density tests shall be performed to adequately evaluate overall compaction of each compacted lift. The results of all compaction testing as well as a map locating test sides shall be submitted to the Agency.
13. A map shall be submitted within 60 days of the issuance date of this permit to propose and depict a groundwater monitoring well to be identified as Well No. MW-12 at the approximate mid-point of Slurry Sump 012B and located within 25-30 feet of the top of slope on the south side of the incline. This monitoring well should be proposed to be completed in the uppermost saturated (water bearing) zone. Following well installation monitoring shall be in accordance with Condition No. 14 below.
14. Groundwater monitoring requirements for Well Nos. MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-11, MW-12, UG-MW-01 and UG-MW-02 are as follows:
- a. Ambient background monitoring shall be performed for Monitoring Well Nos. MW-3, MW-5, MW-6, MW-7, MW-11 and MW-12. Such ambient monitoring shall consist of six (6) samples collected during the first year (approximately bi-monthly) following well installation but no later than during the first year of operation or disturbance to determine ambient background concentrations. Background monitoring shall include the following list of constituents:

| | | |
|-----------|-----------------------|------------------------|
| Aluminum | Fluoride | Sulfate |
| Antimony | Iron (dissolved) | Thallium |
| Arsenic | Iron (total) | Total Dissolved Solids |
| Barium | Lead | Vanadium |
| Beryllium | Manganese (dissolved) | Zinc |
| Boron | Manganese (total) | pH |
| Cadmium | Mercury | Acidity |
| Chloride | Molybdenum | Alkalinity |
| Chromium | Nickel | Hardness |
| Cobalt | Phenols | Water Elevation |
| Copper | Selenium | |
| Cyanide | Silver | |

NOTE: Ambient background monitoring for Well Nos. MW-3, MW-5, MW-6 and MW-7 has been completed with the results of such monitoring contained in IEPA Log Nos. 2496-06 and 6048.12.

- b. Following the ambient monitoring as required under 14(a) above, routine monitoring shall continue on a quarterly basis as follows:
- i. Monitoring Well Nos. MW-3, MW-5, MW-6, MW-7, MW-11 and MW-12 shall continue to be monitored quarterly for the contaminants identified in 14(a) above.
- ii. Monitoring Well Nos. MW-2, MW-4, UG-MW-1 and UG-MW-02 shall be monitored quarterly as required by IDNR/OMM for the following list of constituents:
- | | |
|------------------------|-----------------|
| Iron (dissolved) | Hardness |
| Iron (total) | Acidity |
| Manganese (dissolved) | Alkalinity |
| Manganese (total) | pH |
| Sulfate | Water Elevation |
| Total Dissolved Solids | |
- c. Following completion of active mining and reclamation, post-mining monitoring of the above referenced wells shall consist of six (6) samples collected during a 12-month period (approximately bi-monthly) to determine post-mining concentrations. Post-mining monitoring shall include the list of constituents identified in Condition No. 14(a) above.
- d. Groundwater monitoring reports shall be submitted to the Agency in accordance with Special Condition Nos. 3 and 5 of this NPDES permit.
- e. A statistically valid representation of background and/or post mining water quality required under Condition Nos. 14(a) and 14(c) above shall be submitted utilizing the following method. This method shall be used to determine the upper 95 percent confidence limit for each parameter listed above.

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Should the Permittee determine that an alternate statistical method would be more appropriate based on the data being evaluated, the Permittee may request utilization of such alternate methodology. Upon approval from the Agency, the alternate methodology may be utilized to determine a statistically valid representation of background and/or post mining water quality.

This method should be used to predict the confidence limit when single groundwater samples are taken from each monitoring (test) well.

- i. Determine the arithmetic mean (\bar{X}_b) of each indicator parameter for the sampling period. If more than one well is used, an equal number of samples must be taken from each well.

$$\bar{X}_b = \frac{X_1 + X_2 + \dots + X_n}{n}$$

Where:

\bar{X}_b = Average value for a given chemical parameter

X_n = Values for each sample

n = the number of samples taken

- ii. Calculate the background and/or post mining variance (S_b^2) and standard deviation (S_b) for each parameter using the values (X_n) from each sample of the well(s) as follows:

$$S_b^2 = \frac{(X_1 - \bar{X}_b)^2 + (X_2 - \bar{X}_b)^2 + \dots + (X_n - \bar{X}_b)^2}{n - 1}$$

$$S_b = \sqrt{S_b^2}$$

- iii. Calculate the upper confidence limit using the following formula:

$$CL = \bar{X}_b \pm t \sqrt{1 + 1/n} (S_b)$$

Where:

CL = upper confidence limit prediction
(upper and lower limits should be calculated for pH)

t = one-tailed t value at the required significance level and at n-1 degrees of freedom from Table 1
(a two-tailed t value should be used for pH)

- iv. If the values of any routine parameter for any monitoring well exceed the upper confidence limit for that parameter, the permittee shall conclude that a statistically significant change has occurred at that well.
- v. When some of the background and/or post mining values are less than the Method Detection Limit (MDL), a value of one-half (1/2) the MDL shall be substituted for each value that is reported as less than the MDL. All other computations shall be calculated as given above.

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Construction Authorization No. 7001-11

C.A. Date: September 5, 2012

If all the background and/or post mining values are less than the MDL for a given parameter, the Practical Quantitation Limit (PQL), as given in 35 Ill. Adm. Code Part 724 Appendix I shall be used to evaluate data from monitoring wells. If the analytical results from any monitoring well exceed two (2) times the PQL for any single parameter, or if they exceed the PQLs for two or more parameters, the permittee shall conclude that a statistically significant change has occurred.

Table 1
Standard t-Tables Level of Significance

| Degrees of freedom | t-values (one-tail) | | t-values (two-tail)* | |
|--------------------|------------------------|-------|-------------------------|-------|
| | 99% | 95% | 99% | 95% |
| 4 | 3.747 | 2.132 | 4.604 | 2.776 |
| 5 | 3.365 | 2.015 | 4.032 | 2.571 |
| 6 | 3.143 | 1.943 | 3.707 | 2.447 |
| 7 | 2.998 | 1.895 | 3.499 | 2.365 |
| 8 | 2.896 | 1.860 | 3.355 | 2.306 |
| 9 | 2.821 | 1.833 | 3.250 | 2.262 |
| 10 | 2.764 | 1.812 | 3.169 | 2.228 |
| 11 | 2.718 | 1.796 | 3.106 | 2.201 |
| 12 | 2.681 | 1.782 | 3.055 | 2.179 |
| 13 | 2.650 | 1.771 | 3.012 | 2.160 |
| 14 | 2.624 | 1.761 | 2.977 | 2.145 |
| 15 | 2.602 | 1.753 | 2.947 | 2.131 |
| 16 | 2.583 | 1.746 | 2.921 | 2.120 |
| 17 | 2.567 | 1.740 | 2.898 | 2.110 |
| 18 | 2.552 | 1.734 | 2.878 | 2.101 |
| 19 | 2.539 | 1.729 | 2.861 | 2.093 |
| 20 | 2.528 | 1.725 | 2.845 | 2.086 |
| 21 | 2.518 | 1.721 | 2.831 | 2.080 |
| 22 | 2.508 | 1.717 | 2.819 | 2.074 |
| 23 | 2.500 | 1.714 | 2.807 | 2.069 |
| 24 | 2.492 | 1.711 | 2.797 | 2.064 |
| 25 | 2.485 | 1.708 | 2.787 | 2.060 |
| 30 | 2.457 | 1.697 | 2.750 | 2.042 |
| 40 | 2.423 | 1.684 | 2.704 | 2.021 |

Adopted from Table III of "Statistical Tables for Biological Agricultural and Medical Research" (1947, R.A. Fisher and F. Yates).

* For pH only when required.

NPDES Permit No. IL0077658

Supplemental Construction Authorization No. 7001-11-1

S.C.A. Date: September 17, 2013

Supplemental Authorization is hereby granted to the above designee to construct and operate the mine and mine refuse area previously approved under Authorization No. 7001-11 dated September 5, 2012. These facilities have been revised as follows:

An additional area of 20.0 acres, identified as IBR No. 18 to OMM Permit No. 372, located in Section 32, Township 5 South, Range 4 West, Perry County, Illinois. As proposed and depicted in IEPA Log No. 5030-13, this acreage will be used to develop fine coal refuse (slurry) disposal area identified as Slurry Sump 012C. Surface runoff from this additional area will be tributary to the Slurry Sump 012C. This additional area results in a total area covered by this Permit of 2000.8 acres.

A portion of the pre-law incline immediately east of Slurry Sump 012B will be developed into the slurry disposal impoundment identified as Slurry Sump 012C. This slurry disposal area will be operated as a non-discharging impoundment with water collecting in Sump 012C either being returned to the coal processing circuit or pumped to other onsite non-discharging sumps. The development of Slurry Sump 012C shall be subject to the requirements of Condition No. 1 of this Supplemental Construction Authorization as well as the groundwater monitoring requirements of Condition No. 14 of Construction Authorization No. 7001-11.

In support of the development and utilization of Slurry Sump 012C, spillways will be installed in the Slurry Sump 012A-2 and 012B dams. These spillways will consist of 12-inch culverts and emergency spillways to allow slurry to flow through the series of sumps as slurry may be directed to any of Sumps 012A-1, 012A-2, 012B or 012C. To prevent overflow of Sump 012C, as indicated above, water will be returned to the coal processing circuit or pumped to an onsite non-discharging sump.

The abandonment plan shall be executed and completed in accordance with 35 Ill. Adm. Code 405.109.

All water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.202. For the constituents not covered by Parts 302 or 303, all water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.106.

All Conditions in the original Authorization to Construct are incorporated in this Supplemental Authorization unless specifically deleted or revised herein.

This Supplemental Authorization is issued subject to the following Condition. If such Condition requires additional or revised facilities, appropriate engineering plan documents must be submitted to this Agency for review and approval to secure issuance of a Supplemental Authorization to Construct.

1. A map shall be submitted within 60 days of the issuance date of this modified permit to propose and depict a groundwater monitoring well to be identified as Well No. MW-13 east of the mid-point near the Slurry Sump 012C dam and located within 25-30 feet of the top of slope on the south side of the incline. This monitoring well should be proposed to be completed in the uppermost saturated (water bearing) zone. Following well installation monitoring shall be in accordance with Condition No. 14 of Construction Authorization No. 7001-11.

NPDES Permit No. IL0077658

Supplemental Construction Authorization No. 7001-11-2

S.C.A. Date: December 17, 2014

Supplemental Authorization is hereby granted to the above designee to construct and operate the mine and mine refuse area, previously approved under Construction Authorization No. 7001-11 dated September 5, 2012 and Supplemental Construction Authorization No. 7001-11-1 dated November 1, 2013. These facilities have been revised as follows:

The total permit area for this facility is increased from 2000.8 acres to a current total of 2007.0 acres.

An additional area of 3.7 acres, identified as IBR to OMM Permit No. 372, located in Sections 29 and 32, Township 5 South, Range 4 West, Perry County, Illinois. As proposed and depicted in IEPA Log No. 4122-14, this acreage will be used for a water line to transport make up water from Slurry Sump 012C to Slurry Sump 010B where it will be pumped back to the preparation plant. Fine coal waste (slurry) is not permitted to be transported through the pipeline. Surface runoff from this area will be controlled by stale bale check dams and/or silt fence. This additional acreage is included in the total permit area above.

An additional area of 2.5 acres, identified as IBR to OMM Permit No. 377 area, located in Section 21, Township 5 South, Range 4 West, Perry County, Illinois. As proposed and depicted in IEPA Log Nos. 5476-13 and 5476-13-A, Sediment Pond 007 will be constructed to receive underground mine pumpage. Construction of this basin will incorporate a compacted clay liner as discussed below. This additional acreage is included in the total permit area above.

Location and receiving stream of the Outfall No. 007 at this facility is as follows:

| Outfall Number | Latitude | | | Longitude | | | Receiving Waters |
|----------------|----------|-----|--------|-----------|-----|--------|----------------------------------|
| | DEG | MIN | SEC | DEG | MIN | SEC | |
| 007 | 38° | 05' | 05.78" | 89° | 33' | 18.29" | Unnamed tributary to Galum Creek |

To ensure protection of any potential groundwater resources in the area, a compacted clay liner with a minimum thickness of four (4) feet will be constructed within Sedimentation Pond 007 which receives pumpage from underground mine operations. Such pumpage shall not be directed to or conveyed by any unlined drainage control structure. The compacted clay liner "Quality Assurance/Quality Control Plan" is contained in IEPA Log No. 5476-13-C. A subset of the Quality Assurance/Quality Control (QA/QC) requirements for the installation of the compacted clay liner is included in Condition No. 1 of this S.C.A. 7001-11-2.

As an alternative to the compacted clay liner for Pond 007 as discussed above, an HDPE Geomembrane liner with a minimum thickness of 60 mils may be utilized. In the event that such a synthetic liner is utilized, this liner shall be installed in accordance with the "Quality Assurance/Quality Control Plan" as contained in IEPA Log No. 5476-13-C and as per the manufacturer's guidelines and recommendations.

As proposed and described in IEPA Log No. 4058-14, Dam 012A-1 and Dam 012B will not be constructed due to approval of Dam 012C. Elimination of Dam 012A-1 and Dam 012B will not have an impact on the approved fine coal (slurry) disposal plan. Dam 012A-1 and Dam 012B were approved in C.A. 7001-11 and Dam 012C was approved in S.C.A. 7001-11-1. The entire slurry cell consisting of Slurry Sump's 012A-2, A-1, B and C are now labeled as Slurry Sump 012 and depicted on the Mining Operations Map, Map D.

As proposed and described in IEPA Log Nos. 5297-13 and 5297-13-B and previously approved under Subtitle D Permit 2013-MA-5297, existing open excavation identified as South Portal Disposal Area will be developed into a fine coal waste (slurry) disposal area and operated as a closed circuit system. Three (3) groundwater monitoring wells identified as MW-14, MW-15 and MW-16 were installed as depicted in IEPA Log No. 5297-13-E. Groundwater monitoring for Well Nos. MW-14, MW-15 and MW-16 shall be in accordance with Condition No. 14 of C.A. 7001-11. Ambient background groundwater monitoring is required in accordance with Condition No. 14(a) of C.A. 7001-11 following the ambient background monitoring, routine monitoring shall continue on a quarterly basis for the contaminants identified in Condition No. 14(a) of C.A. 7001-11. Following completion of active mining and reclamation post-mining monitoring shall be completed in accordance with Condition No. 14(c) of C.A. 7001-11. The groundwater monitoring reports shall be submitted according to Condition 12(d) of C.A. 7001-11.

As proposed and depicted in IEPA Log No. 5476-13-C Monitoring Well Nos. MW-17 and MW-18 are proposed to be installed on the south and east side of Sediment Pond 007. Groundwater monitoring for proposed Well Nos. MW-17 and MW-18 shall be in accordance with Condition No. 14 of C.A. 7001-11. Ambient background groundwater monitoring is required in accordance with Condition No. 14(a) of C.A. 7001-11 following the ambient background monitoring, routine monitoring shall continue on a quarterly basis for the contaminants identified in Condition No. 14(a) of C.A. 7001-11. Following completion of active mining and reclamation post-mining monitoring shall be completed in accordance with Condition No. 14(c) of C.A. 7001-11. The groundwater monitoring reports shall be submitted according to Condition 12(d) of C.A. 7001-11.

As described and depicted in IEPA Log No. 4509-14, groundwater monitoring Well No. UG-MW-01 has been properly sealed and abandoned.

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Supplemental Construction Authorization No. 7001-11-2

S.C.A. Date: December 17, 2014

The abandonment plan shall be executed and completed in accordance with 35 Ill. Adm. Code 405.109.

All water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.202. For the constituents not covered by Parts 302 or 303, all water remaining upon abandonment must meet the requirements of 35 Ill. Adm. Code 406.106.

All Conditions in the original Authorization to Construct are incorporated in this Supplemental Authorization unless specifically deleted or revised herein.

This Supplemental Authorization is issued subject to the following Condition. If such Condition requires additional or revised facilities, appropriate engineering plan documents must be submitted to this Agency for review and approval to secure issuance of a Supplemental Authorization to Construct.

1. The four (4) foot compacted clay liner to be constructed within Sedimentation Basin 007 shall be subject to the specifications and procedures presented in IEPA Log No. 5476-13-C, as well as the following:
 - a. All soils to be used for the compacted clay liner shall be free of grass, vines, vegetation and rock or stones greater than four (4) inches in diameter.
 - b. Inter-lift surfaces shall be adequately scarified to ensure inter-lift bonding.
 - c. The placement of frozen material or the placement material on frozen ground is prohibited.
 - d. Contemporaneous placement or protective covering shall be provided to prevent drying, desiccation and/or freezing where necessary.
 - e. Soil lifts shall be placed in loose thicknesses of six (6) to eight (8) inches. Compactive effort shall be applied to each lift to obtain a liner permeability of 1×10^{-7} cm/sec. or less.
 - f. Each soil lift shall be compacted to ninety-five (95) percent standard proctor within two (2) percent below or three (3) percent above optimum moisture content. Compaction shall be determined utilizing ASTM Test Method D698.
 - g. Moisture and density testing shall be conducted at a rate of at least one (1) test per 7,500 cubic yards of material placed.
 - h. After liner placement tube samples shall be used to determine permeability utilizing ASTM Test Method D5084. Permeability testing shall be conducted at a rate of at least one (1) test per 7,500 cubic yards of material placed.

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Special Conditions

Special Condition No. 1: No effluent from any mine related facility area under this permit shall, alone or in combination with other sources, cause a violation of any applicable water quality standard as set out in the Illinois Pollution Control Board Rules and Regulations, Subtitle C: Water Pollution.

Special Condition No. 2: Samples taken in compliance with the effluent monitoring requirements shall be taken at a point representative of the discharge, but prior to entry into the receiving stream.

Special Condition No. 3: All periodic monitoring and reporting forms, including Discharge Monitoring Report (DMR) forms, shall be submitted to the Agency according to the schedule outlined in Special Condition No. 4 or 5 below with one (1) copy forwarded to each of the following addresses:

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Ave., East
P.O. Box 19276
Springfield, IL 62794-9276

Illinois Environmental Protection Agency
Mine Pollution Control Program
2309 West Main Street, Suite 116
Marion, Illinois 62959

Attn: Compliance Assurance Section

The Permittee may choose to submit electronic DMRs (NetDMR) instead of submitting paper DMRs. Information, including registration information for the NetDMR program can be obtained on the IEPA website, <http://www.epa.state.il.us/water/net-dmr/index.html>.

Should electronic filing (NetDMR) be elected for DMR monitoring and reporting requirements, a written notification shall be submitted to the Mine Pollution Control Program at the Marion, Illinois address indicated above that such electronic monitoring has been elected providing an indication of the date and/or quarter in which this electronic filing will be initiated.

Special Condition No. 4: Completed Discharge Monitoring Report (DMR) forms as well as upstream and downstream monitoring results, shall be retained by the Permittee for a period of three (3) months and shall be mailed and received by the IEPA at the addresses indicated in Special Condition No. 3 above in accordance with the following schedule, unless otherwise specified by the permitting authority.

| Period | Received by IEPA |
|-----------------------------|------------------|
| January, February, March | April 15 |
| April, May, June | July 15 |
| July, August, September | October 15 |
| October, November, December | January 15 |

The Permittee shall record discharge monitoring results on Discharge Monitoring Report (DMR) forms using one such form for each Outfall and Discharge Condition each month. In the event that an Outfall does not discharge during a monthly reporting period or under a given Discharge Condition, the DMR form shall be submitted with "No Discharge" indicated.

In the event that electronic filing is being utilized, any and all monitoring results, other than NPDES outfall discharge results reported through NetDMR, shall be submitted to the Agency at the addresses indicated in Special Condition No. 3 above.

Special Condition No. 5: Completed periodic monitoring and reporting, other than DMR's and stream monitoring (i.e., groundwater monitoring, coal combustion waste analysis reports, etc.), shall be retained by the Permittee for a period of three (3) months and shall be mailed and received by the IEPA at the addresses indicated in Special Condition No. 3 above in accordance with the following schedule, unless otherwise specified by the permitting authority.

| Period | Received by IEPA |
|-----------------------------|------------------|
| January, February, March | May 1 |
| April, May, June | August 1 |
| July, August, September | November 1 |
| October, November, December | February 1 |

Special Condition No. 6: The Agency may revise or modify the permit consistent with applicable laws, regulations or judicial orders.

Special Condition No. 7: If an applicable effluent standard or limitation is promulgated under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act and that effluent standard or limitation is more stringent than any effluent limitation in the permit or controls a pollutant not limited in the NPDES Permit, the Agency shall revise or modify the permit in accordance with the more stringent standard or prohibition and shall so notify the permittee.

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Special Conditions

Special Condition No. 8: The permittee shall notify the Agency in writing by certified mail within thirty days of abandonment, cessation, or suspension of active mining for thirty days or more unless caused by a labor dispute. During cessation or suspension of active mining, whether caused by a labor dispute or not, the permittee shall provide whatever interim impoundment, drainage diversion, and wastewater treatment is necessary to avoid violations of the Act or Subtitle D.

Special Condition No. 9: Plans must be submitted to and approved by this Agency prior to construction of a sedimentation pond. At such time as runoff water is collected in the sedimentation pond, a sample shall be collected and analyzed for the parameters designated as 1M-15M under Part 5-C of Form 2C and the effluent parameters designated herein with the results sent to this Agency. Should additional treatment be necessary to meet these standards, a Supplemental Permit must also be obtained. Discharge from a pond is not allowed unless applicable effluent and water quality standards are met.

Special Condition No. 10: The special reclamation area effluent standards of 35 Ill. Adm. Code 406.109 apply only on approval from the Agency. To obtain approval, a request form and supporting documentation shall be submitted to request the discharge be classified as a reclamation area discharge. The Agency will notify the permittee upon approval of the change.

Special Condition No. 11: The special stormwater effluent standards apply only on approval from the Agency. To obtain approval, a request with supporting documentation shall be submitted to request the discharge to be classified as a stormwater discharge. The documentation supporting the request shall include analysis results indicating the discharge will consistently comply with reclamation area discharge effluent standards. The Agency will notify the permittee upon approval of the change.

Special Condition No. 12: Annual stormwater monitoring is required for all discharges not reporting to a sediment basin until Final SMCRA Bond is released and approval to cease such monitoring is obtained from the Agency.

- A. Each discharge must be monitored for pH and settleable solids annually.
- B. Analysis of samples must be submitted with second quarter Discharge Monitoring Reports. A map with discharge locations must be included in this submittal.
- C. If discharges can be shown to be similar, a plan may be submitted by November 1 of each year preceding sampling to propose grouping of similar discharges and/or update previously submitted groupings. If updating of a previously submitted plan is not necessary, a written notification to the Agency indicating such is required. Upon approval from the Agency, one representative sample for each group may be submitted.

Special Condition No. 13: Sediment Pond Operation and Maintenance (Outfalls 001, 002, 003, 004, 005 and 007):

- a. For discharges resulting from precipitation events, in addition to the alternate effluent (Discharge Condition Nos. II and III) monitoring requirements, as indicated on the applicable effluent pages of this Permit, discharges from Outfalls 001, 002, 003, 004, 005 and 007 shall be monitored and reported for Discharge Rate, Sulfate, Chloride and Hardness.
- b. The following sampling and monitoring requirements are applicable to flow in the unnamed tributary to Rock Fork which receive discharges from Outfalls 001 and 005, unnamed tributary to North Fork Cox Creek which receives discharge from Outfalls 002, 003 and 004, and unnamed tributary to Galum Creek which receives discharge from Outfall 007.
 - i. All sampling and monitoring required under 13(b)(ii) and (iii) below shall be performed during a discharge and monitoring event from the associated outfall.
 - ii. Unnamed tributary to Rock Fork, unnamed tributary to North Fork Cox Creek and unnamed tributary to Galum Creek shall be monitored and reported quarterly for Discharge Rate, Chloride, Sulfate and Hardness downstream of the associated outfall. This downstream monitoring shall be performed a sufficient distance downstream of the associated outfall to ensure that complete mixing has occurred. At such time that sufficient information has been collected regarding receiving stream flow characteristics and in-stream contaminant concentrations the permittee may request a re-evaluation of the monitoring frequency required herein for possible reduction or elimination. For the purpose of re-evaluating the downstream monitoring frequency of the receiving stream, "sufficient information" is defined as a minimum of ten (10) quarterly sampling events.

In the event that downstream monitoring of the receiving waters is eliminated during the term of this permit based on an evaluation of the quarterly data, a minimum of three (3) additional samples analyzed for the parameters identified above must be submitted with the permit renewal application a minimum of 180 days prior to expiration of this permit.

- iii. Unnamed tributary to Rock Fork, unnamed tributary to North Fork Cox Creek and unnamed tributary to Galum Creek shall be monitored and reported annually for Discharge Rate, Chloride, Sulfate and Hardness upstream of the associated outfall.

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Special Conditions

Special Condition No. 14: Data collected in accordance with Special Condition No. 13 above will be utilized to evaluate the appropriateness of the effluent limits established in this Permit. Should the Agency's evaluation of this data indicate revised effluent limits are warranted; this permit may be reopened and modified to incorporate more appropriate effluent limitations. This data will also be used for determination of effluent limitations at the time of permit renewal.

Special Condition No. 15: Mercury shall be monitored quarterly until a minimum of ten (10) samples have been collected. This Mercury monitoring is required only under Discharge Condition Nos. I and/or IV and only during quarters in which there are discharges from the outfall which occur under Discharge Condition Nos. I and/or IV. Samples shall be collected and tested in accordance with USEPA 1631E using the option at Section 11.1.1.2 requiring the heating of samples at 50°C for 6 hours in a BrCl solution in closed vessels. This test method has a Method Detection Limit (MDL) of 0.5 ng/l (nanograms/liter). The results of such testing must be reported in "ng/l" (nanograms/liter) and submitted with the quarterly Discharge Monitoring Reports (DMRs). The Permittee may submit a written request to the Agency to discontinue quarterly Mercury monitoring if the sampling results show no reasonable potential to exceed the Mercury water quality standard.